

**REMARKS**

By the present amendment, the specification is amended to correct typographical errors, claims 1-9 are canceled, and new claims 10-29 are added. New claims 21-26 read on unelected subject matter. The new claim language is supported by the application and claims as originally filed, including, but not limited to:

| <b><u>Claims</u></b> | <b><u>Support</u></b>  |
|----------------------|--|
| 10                   | Claims 1 and 6 as originally filed; page 4, line 18 to page 5, line 8; page 10, lines 9-16; page 11, lines 26-31; page 6, lines 21-31; page 14, lines 14-26 and Figures 3 and 4. |
| 11 and 22            | Claim 2 as originally filed; page 4, lines 5-6; page 10, lines 8-16.   |
| 12 and 23            | Page 10, lines 17-29; Table 1, extending from page 12, line 30, to page 13, line 17; Examples I-V, and VII; and Figures 2, 3 and 4.  |
| 13                   | Page 6, lines 26-31; page 11, lines 26-31.   |
| 14                   | Figure 3 and 4; page 14, lines 14-26.  |
| 15 and 24            | Claim 3 as originally filed; Page 6, lines 21-26.  |
| 16 and 25            | Figure 4; page 6, lines 26-30; page 17, line 19 – page 18, line 3; and Examples.   |
| 17-19                | Claims 4, 5 and 7 as originally filed.   |
| 20                   | Page 9, lines 25-27.   |
| 21 and 26            | Claims 8 and 9 as originally filed; page 6, lines 21-31; page 11, lines 26-31.   |
| 27 - 29              | Fig. 4; Examples II-VI; page 7, lines 10-16.   |

In view of the foregoing amendment and the following remarks, Applicants respectfully request reconsideration of this application.

**I. Rejection Under 35 U.S.C. § 112, first paragraph**

Applicants respectfully traverse the rejection of claims 1-7 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. It is asserted in the Office Action on page 3, that, "The claims recite structural limitations defined only by intended purpose. For example, claim 1 recites functionalities for: A) attaching to a solid support; B) attaching one or more amino acids or peptides; and C) attaching one or more labels." In addition, it is asserted that, "with regard to the term 'label', there is no description in the specification of *structural characteristics* that define a residue or compound as a label."

The Examiner supports the present rejection by asserting that, "the instant disclosure only describes two genres of building blocks with similar structures," and repeatedly asserts on page 5 an alleged lack of structural examples of claimed functionality. Applicants respectfully remind the Examiner that one may define a compound by "whatever characteristics sufficiently distinguish it." As stated in M.P.E.P., Section 2163. There is no requirement for structural examples at all if the written description is otherwise adequate.

The new claims recite a building block represented by a Markush structure that is more than adequately supported by the written description in the specification. For example, the variable A has been replaced with the substituted benzyl substructure from claim 6. Each variable within this substructure is defined in terms understood by those of skill in art. In view of the well-defined structure which has replaced the A variable, the description of this substructure as a cleavable linkage to the solid support (see, e.g., page 8, line 31 – page 9, line 16), and the skill in the art, Applicants submit that this element of the claimed structure is fully supported by the description.

Furthermore, the new claims are also fully supported by the application with respect to variable B. Claim 10, e.g., recites that B is one or more amino acids or peptides, or is the reactive group for the attachment of one or more amino acids or peptides or is a reactive group conjugated to one or more amino acids or peptides. The reactive group is further defined to be an amino group, an amino protecting group, or a protected amino group. Numerous examples of the reactive group are provided in at least Figures 3, 4, and 5, Examples I, II, III, IV, V, and VII, and in Table 1, extending from page 12, line 30, to page 13, line 17. Indeed, new claims 12 and 24 expressly recite various embodiments of B. In view of this disclosure, Applicants submit that one skilled in the art may readily envisage this element of the claimed structure as well.

Likewise, claim 10 recites a definition for variable C which is well supported by Applicant's description as understood by one of skill in the art. Thus, C is defined in part as a functionality for the attachment of one or more labels wherein the functionality is selected from  $\text{NH}_2$ ,  $\text{OH}$ ,  $\text{SH}$ ,  $-\text{NHNH}_2$ ,  $-\text{ONH}_2$ ,  $\text{CHO}$ , or a protected form thereof; or, when K is absent, C is a protecting group directly connected to the central trivalent nitrogen atom.

Description of these reactive groups and protected forms thereof is found at, e.g., page 6, lines 26-31; page 11, lines 26-31; Table 1, extending from page 12, line 29 – page 13, line 16 (middle column); page 14, lines 1-26; and Figures 2, 3, 4, and 5.

Alternatively, C is defined as one or more labels in claim 10 and is also supported by the specification. First, the specification defines “label” as a chemical residue providing “a signal which can be detected visually or electrically.” Various categories of label are set forth in the specification (page 6, lines 21-24) and are recited in claim 16 as being a fluorophore, a fluorophore/quench pair, a phosphorescent chemical residue, a luminescent chemical residue, a chemoluminescent chemical residue, a bioluminescent chemical residue, and biotin. Exemplary labels are shown in Figures 4 and 5 and in each of Examples 1-7. Moreover, as these types of labels are exceedingly well known in the art as illustrated by the reference to Garman on page 6, Applicants need not include additional description.

Indeed, Patent Office practice is fully consistent with this reasoning as evidenced by the numerous patents issued with claims that include terms such as label, fluorophore, fluorescent label, fluorescent group, fluorescent compound, bioluminescent compound, chemiluminescent compound, and the like. A very small sample of such patents issued just within the last few months includes the following, with claim terms in parentheses: U.S. Patent Nos. 7,157,575 (fluorophore); 7,150,156 (detectable label); 7,148,193 (label selected from...fluorescent molecules, chemiluminescent molecules); 7,148,030 (fluorophore); 7,153,940 (labeling agent: fluorescent compound, bioluminescent compound, chemiluminescent compound); 7,141,600 (label); 7,138,518 (fluorescent label); 7,135,293 (fluorescent group); 7,125,838 (amino acid side chain labeled with fluorescent, colored, or other spectroscopically detectable group); 7,122,519 (fluorophore); 7,087,600 (detectable label, fluorophore). While many of these patents exemplify various labels—just as the present application does—none restrict the claimed labels to particular structures as the Examiner seems to believe is necessary. In view of Applicants’ disclosure and the skill in the art, Applicants clearly allow the skilled artisan to recognize the identity of the subject matter described. Accordingly, it is requested that this ground of rejection be withdrawn.

**II. Rejections Under 35 U.S.C. § 112, second paragraph**

Applicants respectfully traverse the rejection of claim 6 under 35 U.S.C. § 112 (second paragraph) as allegedly being indefinite. In the Office Action, it is asserted that “claim 6 recites a residue according to Formula II. In said formula, it is not clear what other substituents are present on the carbon attached to ‘Z’. It appears this carbon only has three bonds.” As claim 6 has been canceled and replaced with claim 10, Applicants address the rejection with respect to claim 10.

Applicants respectfully point out that the chemical shorthand used by Applicants in claim 10 is widely understood in the art and may be found in any introductory organic chemistry textbook. For example, Applicants provide page 96 of *Organic Chemistry* (A. S. Wingrove and R. L. Caret, Harper & Row, New York, 1981) describing this shorthand in the 2<sup>nd</sup> and 3<sup>rd</sup> paragraphs with respect to substituted and unsubstituted cycloalkanes. In particular, Applicants draw the Examiner’s attention to the bromocyclobutane on the lower half of the page. There, it is clearly shown that when other substituents are not depicted, hydrogen fills out the valence for carbon. Likewise, the same sort of shorthand for acyclic structures may be found in other organic chemistry texts such as on p. 79 of Carruthers, *Some Modern Methods of Organic Chemistry*, 3<sup>rd</sup> Ed., Cambridge University Press, New York, 1986. Thus, with regard to the formula depicted in claim 10, the skilled artisan will readily understand that the undepicted substituent of the carbon atom bearing Z must be hydrogen by convention. As such, the structure is clear to those of skill in the art, and Applicants respectfully request withdrawal of this ground of rejection.

**III. Rejections Under 35 U.S.C. § 102**

Applicants respectfully traverse the rejection of claims 1-6 under 35 U.S.C. § 102(a) as allegedly being anticipated by Kumar *et al.* Because independent claim 10 replaces claim 1 and incorporates all the elements of claim 6, the rejection will be addressed with respect to claim 10 and its dependent claims. The article by Kumar *et al.* was published in 2003. Applicants draw the Examiner’s attention to the declaration by inventors White and Beythien. As stated in paragraphs 2-4 of the declaration and shown by e-mail correspondence between the inventors and the patent attorney who prepared the application ( Exhibits A and B), the

present application was essentially complete prior to the publication of this reference on February 4, 2003. The declaration and Exhibits therefore show that the invention was itself complete prior to the publication of the Kumar article, and this article is therefore not a proper reference under 35 U.S.C. § 102(a). Accordingly, Applicants respectfully request withdrawal of this ground of rejection.

Claims 1-2, 4 and 5 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Fehrentz *et al.* Claims 1, 4 and 5 are further rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Meldal *et al.* Applicants respectfully submit that the building blocks recited by new claims 10-29 do not encompass the compounds disclosed by either Fehrentz *et al.* or Meldal *et al.* As such, neither reference may anticipate the present claims, and Applicants respectfully request withdrawal of these grounds of rejection.

#### **IV. Unelected Subject Matter**

Applicants respectfully request that the unelected subject matter of new claims 21-26 be rejoined according to Patent Office procedure. As set forth in M.P.E.P. § 821.04, where a product claim is patentable, a process claim that includes all the limitations of the allowed compound must be entered as a matter of right. Applicants note that claims 21-26 depend directly or indirectly from product claim 10 and therefore include all the limitations of claim 10. Applicants submit that in view of the present amendment and remarks, claim 10 is patentable and therefore request that the subject matter of claims 21-26 be rejoined for examination.

***CONCLUSION***

In view of the above amendments and remarks, reconsideration in favorable action on all claims are respectfully requested. If any issues remain to be resolved in view of this response, the Examiner is invited to contact the undersigned at the telephone number set forth below so that a prompt disposition of this application can be achieved.

Respectfully submitted,

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